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7 SCIENTIFIC APPLICATIONS &
8 RESEARCH ASSOCIATES (SARA), INC.,
9 Plaintiff,
10 v.
11 ZIPLINE INTERNATIONAL, INC.,
12 Defendant.

Case No. 22-cv-04480-JSC

ORDER RE: CLAIM CONSTRUCTION

Re: Dkt. Nos. 37, 41, 42, 44

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13 Plaintiff sues Zipline for alleged infringement of U.S. Patent No. 7,606,115 (the '115
14 patent) and trade secret misappropriation. (Dkt. No. 1.)¹ Before the Court is the parties' claim
15 construction dispute over the term "noise" as used in claim 1 of the '115 patent. Having carefully
16 considered the parties' briefing and submitted evidence, and with the benefit of oral argument on
17 July 14, 2023, the Court ADOPTS Plaintiff's construction. The term "noise" is not indefinite.

18 **BACKGROUND**

19 The '115 patent is titled "Acoustic Airspace Collision Detection System." (Dkt. No. 1 at
20 6.) Its abstract describes:

21 An acoustic collision detection system that enables an aircraft to
22 detect an approaching target, recognize the potential for collision and
23 change course to maintain a safe separation distance, with or without
24 operator invention. The acoustic collision detection system consists
25 of an array of acoustic probes and a digital signal processor which
26 receives acoustic data from the approaching target. The digital signal
processor is configured to receive acoustic data from the array of
acoustic probes; filter out noise and its own acoustic signals; extract
the acoustic signals emanating from the approaching target; calculate
the intensity, the bearing and the bearing angle rate of change of the
approaching target, and determine whether the aircraft and the

27
28 ¹ Record citations are to material in the Electronic Case File ("ECF"); pinpoint citations are to the
ECF-generated page numbers at the top of the documents.

1 approaching target are on a potential collision course.

2 '115 patent, abstract. The patent further elaborates on the disclosed technology's components:

3 The technology consists of an acoustic probe array and a digital signal
4 processor which receives detected target acoustic data received by the
5 acoustic probe array. The acoustic probe array utilizes windscreens
and shock absorbers to remove the effects of wind noise and platform
vibration.

6 '115 patent, col. 2 ll. 41-46.

7 The invention claims a system for piloted and unmanned aircraft that uses sound emitted
8 from approaching aircraft to detect approaching aircraft, assess the risk of collision, and avoid
9 collision. '115 patent, col. 1 ll. 16-22. Claim 1 of the '115 patent states:

10 1. An acoustic collision detection system for avoiding a potential
11 collision between an aircraft and an approaching target
comprising:

12 an array of acoustic probes;

13 a digital signal processor configured to receive acoustic data
14 from the array of acoustic probes, wherein said digital signal
15 processor filters out noise and its own acoustic signals;
16 extracts the acoustic signals emanating from the approaching
17 target, calculates the intensity, the bearing and the bearing
angle rate of change of the approaching target, and determines
whether the aircraft and the approaching target are on a
potential collision course.

18 '115 patent, col. 5 ll. 47 – col. 6 ll. 10.

19 The parties dispute whether the term "noise" as used in claim 1 of the '115 patent is
20 indefinite. Their proposed constructions are set forth below:

21 Claim	22 Claim Term	23 Plaintiff's Proposed Construction	24 Defendant's Proposed Construction
22 1	23 "noise"	24 Not indefinite.	25 Indefinite, lacks reasonable certainty as to its scope.

26 Zipline argues the term "noise" is indefinite because it cannot be construed with reasonable
27 certainty, which renders claim 1 and its dependent claims invalid. (Dkt. No. 37 at 3.) Plaintiff
28 disagrees, arguing the claim term's scope is clear when read in light of the '115 patent's
specification. *Id.*

LEGAL STANDARD

A patent is presumed valid. 35 U.S.C. § 282. “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). The party challenging a patent’s validity has the burden of proving indefiniteness by clear and convincing evidence. *Dow Chem. Co. v. Nova Chems. Corp. (Can.)*, 809 F.3d 1223, 1227 (Fed. Cir. 2015); *see also Microsoft Corp. v. I4I Ltd. P’ship*, 564 U.S. 91, 95 (2011) (“[A] patent shall be presumed valid and the burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity. We consider whether § 282 requires an invalidity defense to be proved by clear and convincing evidence. We hold that it does.” (cleaned up)).

35 U.S.C. § 112 requires claims to particularly point out and distinctly claim the subject matter regarded as the invention. *Nautilus*, 572 U.S. at 901 (2014). Though “absolute precision is unattainable[,]” “a patent must be precise enough to afford clear notice of what is claimed, thereby apprising the public of what is still open to them.” *Id.* at 909-10 (cleaned up). “Claim language employing terms of degree has long been found definite where it provided enough certainty to one of skill in the art when read in the context of the invention.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014). A claim is sufficiently definite if it provides objective boundaries for those of skill in the art. *Id.* at 1371.

“[I]ndefiniteness is a question of law and in effect part of claim construction.” *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012). General principles of claim construction apply when evaluating indefiniteness. *HZNP Medicines LLC v. Actavis Labs. UT, Inc.*, 940 F.3d 680, 688 (Fed. Cir. 2019). Claim terms are given the ordinary and customary meaning to a person of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). The claim language is “of primary importance” when determining the bounds of the claimed invention. *Id.* at 1312. “The specification necessarily informs the proper construction of the claims.” *Id.* at 1316. Extrinsic evidence may elucidate relevant art, but such evidence is only considered within the context of intrinsic

1 evidence. *Id.* at 1317-19. “Extrinsic evidence consists of all evidence external to the patent and
2 prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.”
3 *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995).

4 DISCUSSION

5 Zipline argues claim 1 of the ’115 patent is indefinite because the intrinsic record fails to
6 provide objective guidance as to the meaning of “noise.” Zipline insists the plain and ordinary
7 meaning of “noise” is inherently subjective absent objective delineation of the term’s scope
8 because one person’s unwanted noise can be another person’s desired signal. Zipline offers
9 extrinsic evidence in the form of expert testimony to demonstrate a person of ordinary skill in the
10 art (POSITA) would not be able to understand with reasonable certainty from the intrinsic
11 evidence 1) the difference between “noise” and a host aircraft’s own acoustic signals, and 2) what
12 signals constitute “noise.” (Dkt. No. 42 at 10-11.)

13 As a threshold matter, “[i]t is well-settled that, in interpreting an asserted claim, the court
14 should look first to the intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the
15 specification and, if in evidence, the prosecution history” because “intrinsic evidence is the most
16 significant source of the legally operative meaning of the disputed claim language.” *Vitronics*
17 *Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“[T]he specification is always
18 highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best
19 guide to the meaning of a disputed term.”); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1321
20 (Fed. Cir. 2005) (same). In most cases, an analysis of the intrinsic evidence alone will resolve any
21 ambiguity in a disputed claim term, and in such cases, it is inappropriate to rely on extrinsic
22 evidence. *Vitronics*, 90 F.3d at 1583. Moreover, where intrinsic evidence resolves ambiguity, it is
23 improper for extrinsic evidence, such as expert testimony, to introduce ambiguity. *Finjan, Inc. v.*
24 *Cisco Sys., Inc.*, 837 F. App’x 799, 806 (Fed. Cir. 2020); *see also Teva Pharms. USA, Inc. v.*
25 *Sandoz, Inc.*, 789 F.3d 1335, 1342 (Fed. Cir. 2015) (“A party cannot transform into a factual
26 matter the internal coherence and context assessment of the patent simply by having an expert
27 offer an opinion on it. The internal coherence and context assessment of the patent, and whether it
28 conveys claim meaning with reasonable certainty, are questions of law. The meaning [a POSITA]

1 would attribute to [a claim term] in light of its use in the claims, the disclosure in the specification,
2 and the discussion of this term in the prosecution history is a question of law.”) Here, the intrinsic
3 record resolves any ambiguity as to the meaning of “noise.”

4 The ’115 patent claims an acoustic collision detection system comprised of acoustic probes
5 and a digital signal processor that “filters out noise and its own acoustic signals” and “extracts the
6 acoustic signals emanating from the approaching target” to “determine[] whether the aircraft and
7 approaching target are on a potential collision course.” ’115 patent, col. 6 ll. 1-10. There are three
8 kinds of inputs the digital signal processor receives from the acoustic probes: acoustic signals
9 emanating from the host aircraft, acoustic signals emanating from approaching aircraft, and
10 “noise.” ’115 patent, col. 5 ll. 47 – col. 6 ll. 10. The digital signal processor filters out “noise”
11 and the host aircraft’s own acoustic signals to assess the risk of collision using only the acoustic
12 signals generated by approaching aircraft. ’115 patent, col. 2 ll. 25-32, col. 5 ll. 47 – col. 6 ll. 10.

13 The term “noise,” as used in claim 1, is not indefinite and plainly refers to signals
14 extraneous to the acoustic signals emanating from the host aircraft or approaching aircraft. This
15 construction provides an objective baseline from which to understand the term’s scope that aligns
16 with the claimed system’s purpose, which is to avoid collisions through acoustic detection of
17 approaching aircraft. ’115 patent, col. 1 ll. 16-22, col. 2 ll. 25-32. The scope of “noise” is not
18 subjective in this context because it does not depend on a person’s tastes or opinions. *Sonix Tech.*
19 *Co. v. Publications Int’l, Ltd.*, 844 F.3d 1370, 1378 (Fed. Cir. 2017). Instead, the term’s scope
20 depends on the digital signal processor’s objective determination of the source of the signal—a
21 characteristic inherent to the data itself. As in *Sonix*, the specification provides examples of
22 “noise,”² along with criteria sufficient for a skilled artisan to determine whether a signal is “noise”
23 within the meaning of claim 1. *Id.* at 1379. If a signal is not the host aircraft’s own acoustic
24 signal or an acoustic signal emanating from approaching aircraft, then it is “noise.”

25 Because the claim language and specification resolve any ambiguity surrounding the term
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27 ² “Wind noise” (’115 patent, col. 2 ll. 43-45), “noise produced by external mechanical vibrations
28 of the acoustic probe” (’115 patent, col. 4 ll. 15-16), and “noise created by [] turbulence” (’115
patent, col. 4 ll. 19-20).

1 “noise,” it would be improper for the Court to rely on Zipline’s extrinsic evidence to introduce
2 ambiguity. *See Finjan*, 837 F. App’x at 806. Even if the Court were to consider Zipline’s
3 extrinsic evidence, the ambiguity Zipline’s expert testimony introduces either conflicts with or is
4 resolved by the specification. Zipline’s expert claims the distinction between a host aircraft’s own
5 acoustic signals and “noise” would “confound a [POSITA], who would understand the claim’s
6 reference to ‘its own acoustic signals’ to refer to acoustic signals generated by the aircraft. It is
7 common in this field to refer to such acoustic signals as ‘noise,’ but the fact that the patent does
8 not do so would confound a [POSITA].” (Dkt. No. 43 ¶ 33.) This distinction is not a legitimate
9 basis for confusion. The claim language and specification are clear: the term “noise,” in the
10 context of claim 1 of the ’115 patent, excludes a host aircraft’s own signals. Zipline’s extrinsic
11 evidence is therefore “clearly at odds with the claim construction mandated by the claims
12 themselves, the written description, and the prosecution history,” and discounted as a result.
13 *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005); *Southwall Techs., Inc. v. Cardinal*
14 *IG Co.*, 54 F.3d 1570, 1578 (Fed. Cir. 1995) (“In other words, evidence extrinsic to the patent and
15 prosecution history, such as expert testimony, cannot be relied on to change the meaning of the
16 claims when that meaning is made clear by those documents.”) For the same reason, Zipline’s
17 expert testimony claiming a POSITA would be uncertain of what signals constitute “noise” is
18 accorded no weight. As explained above, the intrinsic evidence demonstrates “noise,” within the
19 meaning of claim 1 of the ’115 patent, encompasses any signal that is not the host aircraft’s own
20 acoustic signal or an acoustic signal emanating from approaching aircraft.

21 CONCLUSION

22 The Court ADOPTS Plaintiff’s construction. The term “noise” within the meaning of
23 claim 1 of the ’115 patent is not indefinite.

24 This Order disposes of Docket Nos. 37, 41, 42, 44

25 **IT IS SO ORDERED.**

26 Dated: July 14, 2023


27 JACQUELINE SCOTT CORLEY
28 United States District Judge